

INTEGRATION OF HIGH PERFORMANCE COPPER INDUCTORS WITH BOND PADS

Abstract

Integration of high performance copper inductors are provided wherein a tall, Cu laminate spiral inductor is formed at the last metal level, and at the last metal + 1 level, with the metal levels being interconnected by a bar via having the same spiral shape as the spiral metal inductors at the last metal level and the last metal + 1 level. The invention provides methods for integrating the formation of thick inductors with the formation of bond pads, terminals and interconnect wiring with the last metal + 1 wiring. The subject invention uses dielectric deposition, spacer formation, and/or selective deposition of a passivating metal such as CoWP, to passivate a Cu inductor that is formed after the last metal layer.